

**Montana Board of Oil and Gas Conservation  
Environmental Assessment**

**Operator:** Stealth Energy, USA Inc.  
**Well Name/Number:** Sam 14-1  
**Location:** SW NE Section 14 T11N R30E  
**County:** Musselshell, **MT;** **Field (or Wildcat)** W/C

**Air Quality**

(possible concerns)

Long drilling time: No, 10 to 15 days drilling time.

Unusually deep drilling (high horsepower rig): No, single or double derrick drilling rig to drill to 5,200' TD vertical Kibbey Formation.

Possible H<sub>2</sub>S gas production: Slight.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

- ☐ Air quality permit (AQB review)
- ☐ Gas plants/pipelines available for sour gas
- ☐ Special equipment/procedures requirements
- ☐ Other: \_\_\_\_\_

Comments: No special concerns – using a single or double derrick drilling rig to drill to 5,200' TD Kibbey Formation test.

**Water Quality**

(possible concerns)

Salt/oil based mud: No, freshwater, freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is Seventynine Coulee an ephemeral tributary drainage to the Musselshell River, about 1/16 of a mile to the north from this location. The Musselshell River is about 4 miles to the east from this location.

Water well contamination: No, closest water well is about 1.1 miles to the southwest from this well location. Depth of this stock water well is 1037'. Surface hole will be drilled with freshwater and freshwater muds to 520' and steel 8 5/8" surface casing will be run and cemented to surface from 520' to protect ground water. If productive 5 1/2" casing will be run and cemented to surface. If well is P&A cement plugs will be set to cover the 3<sup>rd</sup> Cat Creek Formation and the Judith River Formation at about 1000'.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: No, Class I stream drainage in the area.

Mitigation:

- ☐ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☐ Closed mud system
- ☐ Off-site disposal of solids/liquids (in approved facility)
- ☐ Other: \_\_\_\_\_

Comments: 520' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud system to be used on surface hole and mainhole.

## Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None, only ephemeral drainages will be crossed.

High erosion potential: No, small cut, up to 2.7' and small fill, up to 1.7', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, a large wellsite of 200'X240' location size required.

Damage to improvements: No, slight, surface use is prairie grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other \_\_\_\_\_

Comments: Access will be from existing county road, Mosby Road and existing two track well/ranch access trails. Will build about 2700' of new access road. Drilling fluids allowed to dry in the pits. Drill cutting will be disposed of in the earthen reserve pits, after being allowed to dry. Earthen pits will be backfilled when dry. No special concerns.

## Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences, none within a 1 mile radius from this location.

Possibility of H<sub>2</sub>S: Slight

Size of rig/length of drilling time: Single or double derrick drilling rig/length of drilling time, 10 to 15 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H<sub>2</sub>S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Adequate surface casing and operational BOP equipment should mitigate any problems.

## Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: None identified.

Threatened or endangered Species: Threatened or endangered species listed is the Black-footed Ferret. Proposed listing is the Mountain Plover. Candidate species are the Greater Sage Grouse and Sprague's Pipit. NH Tracker website lists 4 species of

concern, Greater Sage Grouse, Loggerhead Shrike, Sage Thrasher and Brewer's Sparrow. Shrike, Thrasher and Sparrow are migratory. Greater Sage Grouse is native.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: \_\_\_\_\_

Comments: Private surface lands. Utilizing existing roads and two track well access road for most of the access into this location. Surface is prairie grassland. Well will be drilled this spring. Montana Fish and Game concerns are mostly with the Greater Sage Grouse.

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### **Historical/Cultural/Paleontological**

(possible concerns)

Proximity to known sites None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: \_\_\_\_\_

Comments: On private surface lands. No concerns.

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### **Social/Economic**

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

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### **Remarks or Special Concerns for this site**

Well is a 5,200' TD vertical hole to the Kibbey Formation.

### **Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected. Some short term impacts will occur with the drilling of this well.

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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki  
(title:) Chief Field Inspector  
Date: March 11, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Musselshell County water wells  
(subject discussed)

March 11, 2011  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES  
MONTANA COUNTIES, Musselshell County

March 11, 2011  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, T11N R30E  
(subject discussed)

March 11, 2011  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_